

Video games as a source of extramural English: Finnish university students' perspective

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Abstract

This thesis examines how video games as an entertaining pastime activity may function as a source of extramural English language learning for Finnish players. Previous research about video games and learning has been primarily focused on identifying learning principles deeply rooted in the design of video games. This study examines video games in their immediate sociocultural context, as a form of popular culture comprised of complex communities and activities. The study applied qualitative research methods. The data for this study comes from ten semi-structured interview sessions with Finnish university students of English who were active gamers during their early formal education and listed playing video games as a pastime activity. The interview required informants to give information about their experiences and opinions in relation to video games and English second language learning. The results of the thesis show that the informants consider video games as a significant, effective, and versatile source of additional language learning. Additionally, the results show that the learning experiences described by the informants often realize the characteristics of modern sociocultural learning theories and approaches.

Tiivistelmä

Tässä opinnäytetyössä tutkitaan, miten englanninkielisten videopelien pelaaminen voi edistää suomenkielisten pelaajien kouluajan ulkopuolista oppimista. Aikaisempi tutkimus pelien ja oppimisen suhteesta on keskittynyt pitkälti pelien oppimiselle olennaisten toimintaperiaatteiden kartoittamiseen. Tässä tutkimuksessa tarkastellaan pelejä ja oppimista irrottamatta niitä sosiokulttuurisesta viitekehyksestään populaarikulttuurin muotona, joka koostuu monitahoisista yhteisöistä ja aktiviteeteistä. Tutkimusmenetelmä on laadullinen. Tutkimusaineisto koostuu teemahaastatteluista, jonka kymmenen haastateltavaa ovat äidinkielenään suomea puhuvia englannin kielen yliopisto-opiskelijoita. Kaikki haastateltavat harrastivat videopelejä peruskoulun aikana. Haastattelussa osallistujia pyydettiin kertomaan kokemuksistaan ja mielipiteistään englannin kielen oppimisesta videopelien kautta. Tutkimus osoittaa, että haastateltaville videopelit ovat olleet merkittävä, hyvin toimiva ja monipuolinen kanava englannin kielen oppimisessa. Lisäksi tutkimuksessa todetaan, että haastateltavien kuvauksien perusteella pelien kautta tapahtuva oppiminen myötäilee nykyaikaisten sosiokulttuuristen oppimiskäsitysten malleja.

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1 Introduction

The manner in which video games require and facilitate high-level cognitive processes while maintaining motivation has drawn the attention of the field of education and lead to various emerging interdisciplinary fields and approaches examining the aspects of learning integrated in the design of a gameplay experience. A recent report by the Federation of American Scientists concluded that video games have several attributes that benefit learning and that educational institutions should research, experiment, and collaborate with the commercial industry, in realizing their potential (FAS, 2006). English is commonly considered as the *de facto* lingua franca within video game communities, and functions as the operating language of the games industry in general. In Finland, the vast majority of commercial video games do not undergo a localization process. In order to successfully and seamlessly engage with or within video games, Finnish gamers are, therefore, obligated to have a level of proficiency in English as foreign language. The most recent statistics show that as much as 81,6 % of Finns under the age of twenty play digital games weekly, and 52,2% play on a daily basis. (Pelaajabarometri, 2016). As a common and popular form of entertainment video games, therefore, present a potentially significant source of extramural English for Finnish players.

The research about video games in the context of education has been conducted primarily with the aim of harnessing their learning principles in the creation of new learning platforms. This has resulted in studies that have been largely focused on identifying and examining axioms of learning within video games. Gee's (2007a, 2007b) research into learning principles in "good games" and video games as a form of literacy, in particular, have been a major contribution in the field and helped achieve a great deal of academic traction within the relevant sciences. While decoding or isolating the designs of learning within video games is an essential step for the development of game-based education, the evident disadvantage of these approaches is that they examine games componentially, distancing themselves from how players actually interact with games and in the process neglect any emergent aspects of learning that occur within the wider sociocultural context. Comparatively few studies have approached video games as they manifest, as a cultural medium or form of popular entertainment, and how the themes, concepts, practices, and communities presented by games might produce meaningful learning experiences. Moreover, few studies have focused on examining the players' perception and attitudes about the effectiveness of video games as a learning platform.

Rather than looking at video games strictly as an abstract set of highly effective learning principles in the framework of the various pedagogical approaches and interdisciplinary fields that seek to apply

their potential in the classroom, this study examines how commercial video games, as a cultural medium, function with Finnish players that engage in gameplay that is presented in a foreign language, and how the various activities and phenomena involved in playing a video game in English may create affordances for extramural language learning. Building on the social interactionist view of learning, this study approaches learning as a fundamentally social activity that is full of potential and situated meaning, occurring within complex and dynamic communities of practice. Although, the prevalence of video games in modern classrooms currently does not correspond with their cultural significance for today's learners, more research and critical studies about their utilization are needed, in order to establish to what extent their application is pedagogically sound and viable. This paper seeks to address the need for more qualitative data about the connection between video games and foreign language learning. While this paper approaches video games primarily from their cultural context, the findings of this study are considered in the context of the potential pedagogical applications of game-based learning.

The data for this study was gathered from semi-structured interview sessions with ten Finnish-speaking English Philology and English language subject teacher students in the University of Oulu. This paper examines how the interviewees as English language professionals in training, with a history of playing video games as a pastime activity, view and evaluate video games as a source of extramural language learning. The results of the analysis show that, according to the interview sample, commercial video games are a significant, effective, and versatile platform of extramural language learning with several characteristics that create linguistic affordances, often fulfilling the ideals of modern sociocultural learning theories.

2 Research material and method

This section outlines how the study was carried out, which scientific methods or approaches were applied, and what underlying questions or information were of interest. Additionally, this section describes the research material used in the study, how the material was acquired, which criteria was applied in the interview sampling.

2.1 Data collection and interview

The data for this study was collected by conducting a qualitative semi-structured face-to-face interview with ten Finnish-speaking university students of English who listed playing video games as a pastime activity or a hobby, both during their formal primary and secondary education, as well as during their tertiary education. The interview sessions followed an outline that was designed in advance and included nine questions and numerous explicating supplementary questions that were all thematically linked to language learning and video games (see Appendix A). In a general sense, the definitive goal of the interview was to uncover if and how and in what manner the interviewee's pastime activity of playing video games had facilitated their learning of English. In relation to this, the interview was also interested in what according to the interviewees constitutes as foreign language learning. Moreover, the study aimed to uncover what types of video games the interviewees enjoyed playing as well as what characteristics, features, or game mechanics the informants found most supportive of their language learning. During the study, the scientific methods and strategies of qualitative research were applied as outlined by, for instance, Leavy (2014). The interviews were audio-recorded and transcribed to facilitate the analysis of emergent themes. In the analysis contrasting and analogous views are presented in long verbatim examples to account for bias and to allow their critical examination. After the extraction of emergent themes, the ten informants of this study were invited to examine the findings and analysis derived from their replies and urged to point out any inaccuracies or misinterpretations.

The interviewees of this study were selected based on two criteria. Firstly, all the interviewees were active players and had an extensive history with video games. This denotes that the interviewees are informed about video games in a general sense and aware of, for instance, past and current video games and different trends, the progress of the industry and technology of video games, as well as the various game mechanics and other similar elements that are an integral part of video games. In other words, the interviewees can be considered *literate* players of video games. Secondly, the interviewees were also university students of English. As language professionals in training, the informants likely have a good understanding of learning theories in the field of language study.

Furthermore, those interviewees studying to become teachers of English had extensive knowledge about learning and prevalent theories in the field of education, especially in the context of foreign language learning. In this capacity, one point of interest of the interview was to uncover any emergent themes or issues made by the interviewers about video games as language professionals in training.

Prior to the interview, the interviewees were told in brief about the research and its aims, as well as encouraged to voice their opinions and comments without restrictions. Furthermore, the interviewees were told that their input as professionals of the English language was valued. The interviewees were also encouraged to share any insight, acquired retrospectively during their tertiary education, considering language learning through video games. Especial care was taken to emphasize that the research is interested in the informant's detailed personal experiences. Likewise, the interviewees were also explained that in the context of this study, what is primarily meant by a video games are extensive, large-scale, and elaborate games. However, the informants were also urged to report of any digital games that do not fall within this definition, if they felt that their effect on their language learning had been positive.

3 Theoretical framework

This section presents previous research conducted about video games and learning. The section introduces the wider analytical framework that forms the theoretical basis of the study, including an overview of the relevant theories, viewpoints, and approaches, beginning from broader learning theories and moving on to more specific principles about learning in the context of video games. In addition, this section begins with a limited account of the varying academic views of video games since their conception while examining the role of video games today, as a rising and widespread form of popular culture.

3.1 Growing academic awareness

Recent decades have seen significant advancements in the technology and representation of virtual environments. In a span of a few decades, video games, as the core of virtual worlds, have progressed from non-representational, two-dimensional raster-graphics and simple chip-tunes to detailed, three-dimensional, and photorealistic gameworlds, with high-definition sound-effects, orchestral scores, and professional voice-acting that continually challenge the threshold between simulation and reality. These advancements, together with the maturing audience, have also enriched the stories and narratives conveyed by video games, allowing the exploration and portrayal of serious topics and themes. At best, players today operate in immersive, interactive worlds with nuanced storylines and characters, exploring profound themes and learning concepts, while faced with challenges, choices, and moral dilemmas that have a meaningful and direct impact to the gaming experience. These advancements have allowed game developers to create highly sophisticated, expansive and complex interactive platforms that engage and motivate players in an effective way and have cemented their status as “...the most influential form of popular expression and entertainment in today’s broader culture.” (Jones, 2008 p.1).

While recent studies have shown the learning benefits of collaborative gameplay scenarios, as well as a correlation between a gaming hobby and higher English grades (Piirainen-Marsh & Tainio, 2009; Uuskoski, 2011) the positive influence of video games on foreign language learning has mostly been recognized in informal, non-academic venues. In Finland, English teachers have long since identified and attributed them for the increased school performance of in particular boys, who are statistically more active gamers than girls. The difference in the gaming habits, however, is likely to even out in the future due to a clear shift in the industry towards a more inclusive demographic profile of gamers (Ensslin, 2012).

Regardless of the increasing academic awareness or their evident popularity and relevance as a cultural medium, the application of video games, their underlying technology or learning theories in classrooms or in the Finnish National Core Curriculum remain marginal and cursory. The slow utilization of video games into education is in part rooted in the fact that video games, as a new, fast-growing medium were initially faced with reserved attitudes and commonly considered as “trivial entertainment” which, at their worst, induced violent or antisocial behavior. Likewise, during their appearance in the 1970s, the academia was quick to disparage, and disregard video games and these attitudes persisted largely until the late 1990s when an independent field focused on examining video games in an academic framework took form (Ensslin, 2012).

The reserved attitudes towards video games have, to some degree, continued to present day and the connection between violence and video games remains a constant topic of study and debate, in spite of continuous inconclusive or strongly conflictive findings (see e.g., Zendle et al., 2018). What is more, while research has continually indicated the educational, cognitive, collaborative, and social potential of video games as a learning environment, the academia, in general, has been rigid in fully utilizing and recognizing video games both as a novel technological learning environment and, to a greater extent, as a serious cultural medium. Some academic disciplines still hold digital games in contempt and as a form of culture video games are still associated with aberrant behavior (Ensslin, 2012). Furthermore, within the field of education, the emergence of new digital learning technologies have resulted in a detrimental disconnect, specifically around the concept of ‘digital native’, creating largely unproductive debate and polarization between “technoevangelists” and “technophobes” in the pedagogical application of new digital mediums. (Thomas, 2011 p.1). In order to validate the promising findings and research about the educational potential of video games produced in the past three decades, and to overcome the entrenched attitudes towards digital media, the field of education and pedagogical research is in need of re-adjustment towards more methodological, longitudinal approaches, as well as practical applications of digital media and video games.

3.2 Defining video games

Despite growing academic interest and the fact that an interdisciplinary field of games studies has taken form since the early 2000s, the definition of video games remains an unresolved and problematic question in the context of academia. According to Tavinor (2008), three differing, literature-based theoretical approaches, narratological, ludological, and interactive fiction theory, have surfaced in recent years. However, Tavinor points out that these approaches have refrained from conclusive definitions and focused instead on mapping out distinctive features of video games in the

formation of critical theories, consequently being unsuccessful both, in encompassing the broad range of different video games, as well as formulating a theoretical framework that is strictly applicable to video games.

According to Tavinor (2008), the narratological approach, considers video games as a form of interactive narrative, and in this capacity places them alongside other conventional story-telling mediums such as literature and film. However, as Tavinor points out, narratives cannot be considered a required or distinguishing characteristic of video games in view of the fact that some games may lack any form of narrative elements. Likewise, it can be argued that the narrative elements in some video games, are purely supplementary and disconnected from the actual gameplay experience. The narratological approach is therefore problematic in that it excludes and rejects video games that do not contain any significant narrative elements. The ludological approach to video games, according to Tavinor, does not consider video games as an entirely novel medium but approximates them to traditional games. That is to say, video games, apart from their digital form and venue, are not in any significant way different from games in general. Furthermore, a central element in the ludological discipline is the concept of ergodic texts, or texts which require the reader's active participation in the generation of their content, thus allowing for different types of readings. However, Tavinor argues that such an approach is a meagre substitute for the complex interactivity of video games, and a property not exclusive to them as different readings are in reality a common and even essential feature of both literature and art. According to Tavinor (2008), the third approach, interactive fiction theory, views video games as fictive narratives with interactive properties. However, Tavinor notes that this approach is not strictly distinguishable from other forms of interactive fiction, such as printed or digital gamebooks that have branching narratives developing according to the reader's choices. Likewise, Tavinor argues that the interactive fiction theory is also easily confused with the narratological approach and consequently shares some of its problems. That is to say, video games may be fictional but at the same time lack any narrative properties or vice versa. As a solution for the limitations of the above-mentioned approaches, Tavinor suggests that the most effective way of defining video games is a disjunctive one which assigns non-exclusive conditions:

X is a videogame if it is an artefact in a digital visual medium, is intended primarily as an object of entertainment, and is intended to provide such entertainment through the employment of one or both of the following modes of engagement: rule-bound gameplay or interactive fiction. (Tavinor, 2008).

However, it should be noted that while Tavinor's disjunctive definition of video games is sufficient and successful in distinguishing games from other forms of media in terms of their technical properties, and offers a solution to a problem largely overlooked by the academia, video games may also be examined from a viewpoint that is more relevant in the framework of learning and education. We may extend our definition of video games to encompass their applicability or value as entertainment-based platforms for learning. Gee (2003), for instance, makes a distinction between video games in general and 'good video games' which apply a set learning principles that are integrally part of learning to play the game itself. Gee identifies several characteristics of good video games (for more see Gee, 2007b). Good video games, according to Gee, necessitate the players to acquire and establish new identities that foster long-term commitment and learning. Good video games are also interactive in that they situate the player in interactive game worlds and relationships that actively respond to the player's actions and decisions. Consequently, good video games allow the player to alter their gaming experience as per their requirements and preferences both by being fundamentally interactive experiences and by offering extensive customization options and as a result grant the player with a real sense of agency or ownership. Likewise, being essentially open-ended and unrestricted environments that present progressive challenges, good video games facilitate creativity in complex problem-solving scenarios. Furthermore, in terms of language, good video games offer verbal information with consideration, only when it is required or needed by the player and it is presented in a way that allows for situated meanings to be construed. (Gee, 2007b). The principles regarding verbal information and situated meaning are therefore relevant especially in the context of language learning. The fact that video games generally refrain from purposefully saturating the gaming experience from unnecessary verbal information and that the information provided is essentially situated, may be a valuable resource and functionality for players who are engaging with a game that is presented in a foreign language.

Similarly, video games may be examined and recognized as a wider sociocultural phenomenon manifesting as a composite social activity wherein the activity of playing a video game is not seen directly limited to an individual engagement with a piece of technology. Rather, the activity of playing a video game may be seen as a varied and layered range of complex interactional relationships spanning across long periods of time. The players may, for instance, discuss video games, share experiences, seek information, and learn new strategies with other social actors through different platforms and venues that are detached from the actual gameplay activity.

When defining video games, it is also noteworthy to examine their role as a form of popular entertainment in the context of culture. Although the notion remains controversial, video games are cultural artefacts and therefore may be, in many cases, considered as creations high in artistic expression (see e.g. Tavinor, 2009). However, like much of the controversy surrounding video games, the reluctance to accept them as a fledgling artistic medium, may be explained by the fact that they are a comparatively new phenomenon. Martin (2007), for instance, notes that video games, like all novel mediums of art, are at first commercial in nature and therefore initially overlooked and disregarded. Video games, therefore, are in the process of gaining recognition from the art world in the same manner that films or photography were during their emergence as an artistic medium (Martin, 2007). It could be argued, however, that video games have, to some extent, already attained this status. Sageng et al., for instance, points out that despite the fact that video games have been primarily designed as entertainment, they are decidedly noteworthy aesthetic constructions that conflate "...unique dimensions of artistic expression, design challenges and creative possibilities." (2012, p.2). Correspondingly, Martin (2007) argues that creating video games already includes the application of conventional forms of artistic expression, and as such "...videogames compile all of the art world's tools into one medium; drawing, painting, sculpting, design, architecture, creative writing, computer and video art and acting all come together to create video games." (p.205)

Ensslin (2012), likewise, notes that the fact that the British Academy of Film and Television Arts has presented awards as a separate category for video games, is suggestive of the industry's rising recognition. As it has been discussed, video games manifest as an amalgamation of different forms of conventional artistic expression, such as music, visual arts and fiction that on their own may be considered as established or 'respectable' forms of culture. The acknowledgement of the cultural and artistic validity of video games may therefore be imperative, especially in the framework of language learning where culture holds a prominent role but also needed in order to diminish the varying reserved attitudes video games and gaming communities face.

3.3 Sociocultural approaches to language learning

Modern learning theories are rooted in the Vygotskian sociocultural theory (SCT) which views learning as a deeply social and mediated process between participants or artifacts of varied expertise, and of which language or other ways of meaning making are essential tools. In this capacity, learning is seen as tied to collaborative interactive mental processes, such as problem-solving (Mitchell et al., 2013). According to Lantolf (2000), the central concept of the sociocultural theory is that of the mediated mind. That is to say, humans do not directly alter the world but do so by utilizing a range of tools or artifacts. These tools, physical or symbolic, are created, passed down, adapted by each generation to fit their shared or individual requirements. In addition, important key issues of the sociocultural theory are the concepts of self- and other-regulation, scaffolding, the Zone of Proximal Development, and later on the Activity theory. The concept of self-regulation, according to Mitchell et al., (2013) is the ability of an experienced learner to develop their proficiency by engaging in learning activities in an autonomous and independent manner. Inexperienced learners, on the other hand, with the support of the more proficient learners, initially engage in other-regulation, whereby the learner is gradually guided, through mediated encouraging or supporting language and collaboration, towards a shared understanding, until knowledge is internalized or appropriated. The positive dialogue and the active guidance towards underlying phenomena or issues during a learning activity, as Mitchell et al. (2013) point out, has been described as scaffolding. The Zone of Proximal Development, according to Mitchell et al. is a metaphorical sphere of knowledge which an inexperienced learner cannot attain through autonomous effort but can learn, to a degree, when afforded with the appropriate mediated guidance and collaboration of more experienced learners. The Activity theory, building on the SCT distances itself from the learning and mediation occurring between individuals, and examines instead the wider collaborative framework of action and interaction within communities. An essential tool in Activity theory is the conceptualization of activity systems which illustrate the objectives, rules, and tools applied in collaborative effort and how their applications are organized in realization of shared goals. (Mitchell et al., 2013).

Although the sociocultural theory was initially posited as a generalized theory about the mental development of humans, it has been successfully applied and extended as a theoretical groundwork in second language learning where many core concepts of SCT have been found relevant. (Lantolf, 2012). Furthermore, since its conception, the key ideas in SCT have been developed, refined, and applied in new language learning disciplines, such as Second Language Acquisition, and led to various broader approaches, viewpoints and areas of study such as the Social Interactionist Theory

and Ecology in language learning. In the framework of language learning, the potential of video games and game-based language learning rises from their immediate sociocultural connection. As Reinders (2012) points out, the potential of the application of video games in language learning is grounded in the fact that learning is "...integrated into the sociocultural context of learners' lives and encourages collaboration and lifelong learning." (p. 1). Video games, therefore, may function as a personalized connection between informal and formal learning.

3.4 Ecological perspective to language learning

Building on the sociocultural theory Van Lier (2000) approaches learning from an ecological perspective that distances itself from established empiricist theories and practices, while offering critique of their underlying scientific premises. The three premises identified by Van Lier (2000) are problematic, firstly, because they are rooted in a standardized scientific framework of physics and other "hard" sciences. Secondly, learning is often viewed strictly as a process of receiving information which is then formed into mental structures within the brain, and finally, interaction is seen as a cognitive conduit to the mind which in turn is viewed as an abstraction of the brain.

Conversely, the ecological approach to language learning, according to Van Lier (2000), refrains from forms of reductionism and focuses instead on emergent issues. In this regard the ecological approach does not attempt to examine larger phenomena through their smaller components, as emergent issues cannot be diminished and accurately examined in this manner. Similarly, the ecological approach asserts that cognition or learning cannot be strictly bound to mental processes that occur in the brain. Moreover, the learner's social activity, specifically their interaction, is essential to understanding their learning, or as Van Lier exemplifies: "...they do not just facilitate learning, they *are* learning in a fundamental way." (2000, p. 246.) In this regard the ecological perspective argues that the learner is interacting within environments that are enveloped with meaning which, through the learner's participation and interaction, is gradually revealed. Learning, therefore, is "...not a holus-bolus or piecemeal migration of meaning to the inside of the learner's head, but rather the development of increasingly effective ways of dealing with the world and its meanings." (Van Lier, 2000, p. 246). However, as Van Lier (2000) points out, this does not denote that learners are blank canvases that obtain information through seamless interaction within a semiotic environment but that learning and language are representational, as well as ecological phenomena.

In more detail, Van Lier describes the ecological approach through several key characteristics. One central aspect of the ecological approach, according to Van Lier (2000), is the relevance of interaction.

Building on SLA and sociocultural theory, the ecological approach examines interaction in a manner which strives to establish a detailed account of interaction in its entirety, therefore revealing the emergent aspects of learning. The difficulty of the approach, as Van Lier points out, lies in the absence of applicable research procedures that comprehensively capture interaction (2000).

Drawing on other fields of science, ecology in the context of linguistics and language learning, according to Van Lier (2000) is to examine "...language as relations (of thought, action, power), rather than as objects (words, sentences, rules)." (p.251). In doing so, ecological linguistics connects verbal interaction to other semiotic modes, such as non-verbal interaction. In this regard, learning occurs through semiotic activities within the environment which creates a "semiotic budget" or a body potential meaningful interaction that is only allowed by the specific situation. (Van Lier, 2000, p. 252).

Another core concept of the ecological approach to language learning is affordance. In short, affordance in the context of language learning is the sum of the learning opportunities presented by an environment to an active learner. To the learner, learning environments are made up of various requirements, opportunities, and restrictions that are potential opportunities for learning. Van Lier (2000) argues that affordance can be construed in a manner which allows access and creates encouragement, and in doing so echoes the concepts of situated meaning and legitimate peripheral participation.

3.5 Video game literacy and semiotic domains

In the context of education and pedagogical studies, a great deal of the existing academic research on video games has been devoted to uncovering and understanding how and what type of learning occurs when video games are played. James Paul Gee, for instance, has written at length about the various learning principles intrinsically part of the design of video games. Gee (2003) argues that in a cognitive context, learning to play a video game is, in fact, parallel to learning a new form of literacy. Gee (2003) presents two reasons as to why we should expand our concept of literacy from the traditional reading and writing and apply it to video games. Firstly, as essentially multimodal experiences, combining text, audio, and visual elements, video games are a synthesis of different communicational systems that exceed "...images and words to include sounds, music, movement, and bodily sensations." (p.18). The visual elements in multimodal texts, as Gee (2003) notes, frequently convey meanings that are different from the textual elements. Secondly, when both visual and textual elements are presented together they convey information that neither can produce alone.

In other words, in addition to reading and understanding the textual elements, successfully playing a video game requires the decoding and comprehension of various visual symbols and other artifacts presented in conjunction with them. In this capacity, Gee (2003), argues that video games are the most complex and effective venue of multimodal literacy.

Gee (2003), however, also emphasizes the importance of what they refer to as “semiotic domains”, in such decoding or meaning-making situations. Semiotic domains, according to Gee (2003), are the different types of contexts in which textual and visual elements function and are bound to. Texts and symbols and their meanings, therefore, are not by any means universal, but depend on the context in which they are presented. As Gee (2003) points out:

To understand or produce any word, symbol, image, or artifact in a given semiotic domain, a person must be able to situate the meaning of that word, symbol, image, or artifact within embodied experiences of action, interaction, or dialogue in or about the domain. (p.24)

Gee (2003) describes the learning of a new semiotic domain as a threefold process that involves experiencing, affiliation, and preparation. Firstly, when engaging with a new semiotic domain the learner must experience and navigate the world or domain in new ways. Secondly, the learner must become aware and acknowledge the different social practices inherently part of the semiotic domain and gain affiliation with the different social actors within it. Lastly, an essential part of learning a new semiotic domain is obtaining resources that establish the base for future learning, not only within the existing domain but also in domains that may be related to it. Together these three aspects, according to Gee (2003), constitute the building blocks of active learning. In order to develop further into critical learning, however, the learner must also be able to think about the domain on a highly abstract level and produce or invent meanings that are new but still applicable and valid within the semiotic domain. Video games, according to Gee (2003), are structured in a way that promotes or even necessitates abstract meta-level cognitive processes and therefore foster critical learning. Gee (2003) also notes that semiotic domains may be examined internally, by observing the content that is representative of a particular semiotic domain, or externally by examining the social actors participating in domain-specific practices. In the framework of video games, Gee (2003) discusses the example of first-person shooter games as a semiotic domain. Examined internally, a first-person shooter is a semiotic domain that is represented from the perspective of the player’s avatar and typically involves navigating a game world while defeating opponents using a weapon. In comparison, the semiotic domain of a first-person shooter is altogether different from, for example, that of a role-playing game. Viewed

externally the semiotic domain of a role-playing game typically involves, as the name entails, adopting and developing a certain character role in an extensive story-driven and thematically elaborate setting.

3.6 Situated learning and multimodality

Gee (2008) argues that regardless of current learning theories, many educational institutions today hold traditional views of learning and inaccurately consider it as strictly acquiring a rigid, domain-centered body of knowledge. In opposition, Gee (2008) argues that all domains of knowledge primarily consist of various activities and experiences. In more detail, knowledge is active and consists of interaction that is applied to use already gained knowledge as well as to produce new information. Likewise, domains of knowledge include experiencing or perceiving the world from their perspective. However, Gee (2008) points out that while the traditional understanding of learning may not be the most effective approach, simply giving learners unrestricted and boundless access to domains of knowledge without guidance or direction is equally problematic and lead to what they call the “paradox of deep learning” (p.2). That is to say, a learner introduced to a new domain of knowledge must become acquainted with the various activities or “...ways of doing, being, and seeing...” in a progressive way in order to fully understand “...how to look at the domain and how the complex variables at play in the domain inter-relate with each other”. (Gee, 2008, p2) These essential issues, Gee continues, have led to pedagogic approaches that strive to create learning environments which have immersive properties in that they allow for more unobstructed movement and interaction within the domain while offering the learner guidance in a sophisticated way. Video games, according to Gee, (2003) typically function based on these principles by providing players navigating game environments with information that is “on demand” and “just in time”. (p.211)

Players, therefore navigate within a domain of knowledge where learning appears to be primarily situated. Situated learning, according to Lave & Wenger (1991) is deeply ingrained in the process of *legitimate peripheral participation*, a viewpoint of learning whereby learners “...inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community.” (p. 29). An essential part of legitimate peripheral participation, according to Lave and Wenger (1991), is the gradual process of becoming a full participant within a sociocultural practice during which new learners acquire skills and knowledge that are pertinent within the community of practice. That is to say, new learners work together with professionals on the periphery or outskirts of a community and

gradually, through active participation and guidance work their way towards the center becoming full practitioners themselves.

In the context of video games, Gee (2003) introduces a concept that is very similar to Lave and Wenger's notion of legitimate peripheral participation in situated learning. Gee argues that many (good) video games make use of a theory of learning he calls *distributed authentic professionalism* (Gee, 2003, p.13). Distributed authentic professionalism, according to Gee, is a process by which the knowledge of a particular domain, or various sub-domains within them, are distributed between the player and the various other virtual actors or entities within the game environment, such as a non-playable character (NPC). Gee (2003) points out that the distribution of knowledge allows players to be immersed in and focus in the activities and practices pertinent in the domain while being supported and guided by the knowledge or professionalism designed as part of the other virtual entities within the game environment. Likewise, the guidance and instructions offered by any virtual entities are presented only when they are needed and tied to specific actions and experiences occurring within the game, therefore allowing players to contextualize their meaning. Gee (2003) also points out that the information and facts gained by players in such instances of situated learning "come free" (p.18). That is to say, players acquire new words, facts and information through incidental learning, as a consequence of the various practices and activities they engage with while playing the game, and not by conscious, goal-oriented cognitive effort.

It could be argued then, that players who engage with a game presented in a foreign language, not only move towards professionalism within specific domains of knowledge, through peripheral participation and the support of virtual distributed knowledge, but also inevitably, to some extent, learn the language and linguistic properties pertinent within that domain of knowledge as consequence. After all, being successful in, and completing video games typically requires players to interpret very specific objectives, goals, and challenges presented by the game, and follow the guidance and instructions given to complete them. Likewise, players who engage with a game in a second language may be motivated to, and actively work towards learning the language, as any shortcomings in proficiency will lead to difficulties in progressing within the game.

3.7 Digital game-based learning

The potential video games hold for education has been noted and resulted in the formation of several pedagogic approaches and interdisciplinary fields working towards harnessing their power, to varying degree, as a modern learning platform. While the focus of this study is in commercial and entertainment-based video games as a cultural medium, it is warranted to examine the emerging game-based approaches to establish an overall understanding about the current standing of the pedagogical applications and the various issues and limitations such approaches face.

One such approach is digital game-based learning. According to Prensky (2007), digital game-based learning is, at its core, the incorporation of educational content into video games. Prensky (2007) presents three reasons why digital game-based learning offers a viable and functioning platform for learning. Firstly, the combination of learning and video games fosters additional engagement and therefore aids learners who lack motivation. Secondly, digital game-based learning allows the learning process to be interactive, consequently enabling the customization of various forms of learning and goals. Finally, the integration of educational content into video games can be presented in diverse ways and enables the creation of highly contextual learning environments. According to Prensky (2007), in an ideal scenario, a game that includes educational content, appears and functions like a conventional commercial game, that is to say, to the player or learner the two are, in terms of their appearance and mechanics, indistinguishable from one another as a learning platform and entertainment. Digital game-based learning, therefore, faces the challenge of producing seamless, entertaining learning environments that convincingly mimic commercial video games. This, on the other hand, necessitates educators invested in game-based learning to keep up with the rapidly changing trends, standards, and technological developments of the commercial video game industry.

However, as Prensky (2007) points out, in order to be successful, digital game-based learning must also overcome challenges that are relevant and present both in the production of commercial video games but also tackle issues that emerge from the incorporation of educational content. What is more, as Prensky (2007) notes, due to the contextual nature of learning and the video games themselves, there exists no standard solutions which ensure success and efficient learning for the application of game-based learning. Digital game-based learning therefore, must utilize various ways of learning and take into account variables such as the target audience, the subject matter, political context, technology, available resources, and distribution. Likewise, in terms of content, game-based learning faces the same challenges as traditional learning approaches. That is to say, the content of educative

video games must meet the learners' requirements. The content of educative video games, Prensky (2007) continues, cannot be too difficult, to the extent that it causes frustration and halts progression, nor can it be entirely unchallenging so that the learner loses interest altogether.

The underlying notion in Prensky's (2007) promotion of digital game-based learning is that the significant advancements in technology have also led to a fundamental change in the manner in which we learn. Educational practices of today, Prensky (2007) claims, are ineffective because institutions are attempting to "...educate a new generation in old ways, using tools that have ceased to be effective." (p. 17). To overcome this discontinuity between older and younger generations, Prensky (2007) argues that learning should be achieved by various ways of doing that are principally fun for the learner. Prensky's underlying assumptions about today's learners, particularly the notion of digital natives, however, have been rigorously challenged by a number of researchers in recent years. Winrow (2012), for instance, outlining the debate around digital game-based learning, points out that critics have raised the issue about the assumption that learning itself is not fun, as well as the efficacy of simply using technology to motivate learners whose lives are already highly saturated by it. However, Winrow (2012) notes, the debate about digital game-based learning has also resulted in studies that attempt to uncover the guidelines under which the application of games in classroom is pedagogically viable. According to Winrow (2012), these issues have been effectively examined by, for instance, Van Eck (2006), who presents limited possible approaches for the utilization of game-based learning, and Squire (2016) who describes the underlying changes required in the school culture for such applications to be successful.

4 Findings and analysis

This section presents the findings of the ten interview sessions. The section examines in detail the informants' experiences and opinions about learning English as a foreign language through video games, while offering an analysis and discussion of the replies drawing on the theoretical framework.

4.1 Benefits of playing and learning experiences

The interview answers revealed that all ten informants found that playing video games had assisted or advanced their learning of English. Furthermore, when asked to specify or assess the extent in which playing video games helped, several interviewees felt that video games had a significant or substantial positive effect on their English skills. For instance, while the interviewees were not asked to give a numerical scale, one interviewee noted, on the effectiveness of video games: "On a scale of 1 to 5, I would definitely say 5." Similar scale was also provided by another interviewee who felt that their interest towards video games was influential in their effectiveness: "On a scale from 1 to 10, I think if I had not been interested in games it would've been around 6-7 but because I was interested I'd say it was around 8." Interestingly, one interviewee who described video games as very influential, felt that their English grade was directly connected to their gaming habits, recounting an instance when their access to play was restricted: "Playing had a significant influence on me. For example, when I was in secondary school, and my computer broke one summer, in the next school report my English grade had dropped."

According to the interviewees, video games facilitated learning in several different areas of language learning. Collectively, the interviewees noted that games had developed their English skills, through a wide range of linguistic resources or affordances, with grammar, word order, syntax or sentence structure, conjugation, irregular verbs, vocabulary, intonation, communication or interaction, speech or pronunciation, as well as, listening and reading. One interviewee, for example, felt that video games were most beneficial with vocabulary and reading comprehension, while emphasising the linguistic affordances offered by a role-playing game's dialogue or story: "Vocabulary, reading comprehension for the most part. When I was a child I learned a lot from *Final Fantasy VIII*, from reading the dialogue and the story." Similarly, another interviewee felt that games, likewise, helped them in expanding vocabulary and assimilating grammar, but also underlined the linguistic resources and guidance provided by native speakers in multiplayer scenarios:

- (1) Games expanded my vocabulary. You also sort of automatically learn the grammar. Even just by following how natives use the language and

then mimicking it, you pick up a lot of things. And of course, I'm sure verbal interaction helps with pronunciation.

In more general terms, several informants noted that video games had a positive influence, specifically, during their early stages of foreign language learning (see examples 2, 3, 4). Furthermore, points were made by some of the informants about the manner in which the learning occurred. Few informants characterised the language learning process as indirect or natural, whereby they progressively assimilated or adapted linguistic resources from the various affordances offered by the video games. One interviewee, for instance, felt that video games had a significant impact, during their early stages of English language learning and specifically noted the effectiveness of the communicative aspects of multiplayer games. Another interviewee noted that video games had been the most helpful medium in terms of English language learning and felt that during the early phases, games functioned as the single greatest resource of language learning. Additionally, the interviewee characterised the learning occurring through video games as incidental whereby they assimilated the language instead of a conscious learning. Similarly, one interviewee reflected that video games were helpful because they exposed them to English as a foreign language at a young age, therefore fostering their learning and understanding in a natural manner. Specifically, the interviewee noted that, rather than teaching grammar, video games allowed them to develop intuitive understanding about how the language functions.

- (2) Especially in the early stages of learning, after I had learnt the very basic rules at school, it was very significant. For instance, playing *World of Warcraft*, I learned very much about English because I had to communicate a lot.
- (3) I think they were the most helpful thing out of everything. During my early childhood learning, how I assimilated and begun to learn the language, most of it, probably comes from games.
- (4) Most of all games exposed me to the language at young age. The greatest benefit was that games developed my ear for the language and naturally developed my knowledge about the language. It was not so much about grammar and stuff like that as it was about structure and how the language is used and written in a natural, almost native-like manner. Games also helped me with communication when I was playing online with other people.

The answers indicate that the informants regard video games and their gaming hobby as an effective extra-curricular activity for English language learning. In general terms, the replies clearly show that, for the informant's, video games have been a significant factor in advancing their English skills in a

meaningful and personal manner. This is reflected in the informant's display of passionate attitude towards video games and their highly positive and confident outlook on their capability to facilitate language learning. Likewise, the answers reflect that the informants feel, to varying extent, that their proficiency or skill level in English as a foreign language is fundamentally connected to or facilitated by their gaming hobby. The answers also reflect that many informants feel that their engagement or experiences with video games at a young age was essential for their learning and in building their language competence in a natural manner. The informant's replies about their early experiences with language through video games may reflect that games are an intuitive and entertaining extramural activity, particularly engaging for children and young learners. In this regard, the informant's experiences about playing video games during their childhood echo the learning principles often utilized in the education of children, which places emphasis on learning activities that are rooted in play and fun.

Among more specific areas of language learning, one recurring aspect brought up by the interviewees was the effect video games had on expanding their vocabulary. When asked to further specify or describe the type of vocabulary playing video games taught, several interviewees noted that the vocabulary they had learned was diverse, wide-ranging, specialized or pertaining to specific domains, and often dependent on the genre or setting of the video game in question (see examples 5,6,7). One interviewee, for instance, noted that while, on a more general level, the vocabulary was varied, specifically role-playing games helped with what they characterized as "difficult", genre-specific vocabulary. Similarly, one interviewee found that describing the vocabulary of video games was problematic as it was dependant on the genre of the game. One interviewee, brought up the positive effect video games had in learning what they considered as "practical" vocabulary that was relevant in communicative multiplayer scenarios. The interviewee also felt that the vocabulary was genre-specific and noted that players are compelled to understand the specialized vocabulary of video games in order to progress.

- (5) Overall, the vocabulary was very varied. The type of vocabulary I mainly learned was a bit more difficult or specialized since role-playing games have lengthy, extensive stories. I played different types and genres of role-playing games, so the vocabulary might have been, for instance medieval-themed or on the other hand very technology oriented.
- (6) It's hard to say, all kinds of different vocabularies. I played all sorts of games and it depended on the game. For instance, in a racing game when I was tuning a car I picked up technical vocabulary and on the other hand

in a more story-driven games I learned more sort of “emotional” vocabulary or something in that vein.

- (7) For example, in multiplayer games I learned a lot of practical stuff, how to communicate with others, how to plan things together. I used to play this racing game for a couple of years and prior to that I didn’t know how to speak in English. But after I had been playing it for a couple of years, I knew how to speak. In addition, depending on the game and its theme or genre, I learned a lot from different fields and subject areas. In video games, you have to understand the language if you want to do anything. You must understand even the highly technical vocabulary.

The informant’s replies seem to indicate that playing video games, with their varied genres and subject matters, are a potentially effective platform that facilitates, in particular, the learning of highly specialized or advanced subject areas and their vocabulary. The informant’s frequently stressed the benefits of the availability of a wide variety of video games, genres, and specific game mechanics, allowing them to choose games according to their interests and preferences. The freedom of choice, on the other hand, seemed to foster and facilitate agency and motivation, allowing the informant’s achieve a more personal and meaningful relationship with video games. The characteristics attributed to the register of video games by the informants, likewise, frequently emphasised their wide range, versatility and level of difficulty that seemed to exceed the level of difficulty, and to a greater extent, the variety of the vocabulary and language the informants were in contact within formal language learning settings. According to the informants, video games are often structured in a manner which necessitates players to learn, or at the least have grasp on the vocabulary of specific games in order to proceed or become a more effective player. In addition, the informant’s replies indicate that video games may be useful for learning vocabulary that is pertinent in broader fields, topics or subject matters. (See examples 5, 8). Furthermore, the informants noted that characteristics of the vocabulary were not strictly limited to the genre or topic of the game but may extend to specific game mechanics or genres. For example, a distinction was made by the informants between the vocabulary of single- and multiplayer games. In the latter, the replies indicate an emphasis on vocabulary that could be described as interpersonal or interactional language that manifests in communicative scenarios, which may be characterized by competitiveness, co-operative effort, and shared goals or challenges within the video game. Similarly, points were raised about the manner in which players learn and engage with single-player and multiplayer video games. In the latter emphasis was given to learning experiences that arise from the players’ active participation and interaction with other players. In contrast, in single-player games the learning was often characterized as occurring through close observation and interaction with the virtual environment of games.

Correspondingly, one interviewee felt that the vocabulary was both general and specialized. In particular, the interviewee noted that video games belonging to the fantasy or war genre facilitated the learning of vocabulary that was connected to broader subjects such as politics or history:

- (8) It depends on the game, of course. It was both general or common vocabulary but the games I was mostly interested in had sort of archaic English. And of course, there were fantasy and war games that taught me words that had to do with politics, history, and war.

One interviewee noted that, while the vocabulary they had acquired was, to some extent, specialized, and therefore infrequently applicable in regular, everyday communication, they felt that video games taught expressions often used by native English speakers.

- (9) It could be that the vocabulary is somewhat specialized and you won't necessarily use it often in day-to-day conversations. I would say that you learn a lot of phrases or expressions that natives use a lot.

The interviewees' replies about the benefits of playing video games have on foreign language learning, in a general sense, seem to corroborate a quantitative study conducted by Uuskoski (2011) which examined the relationship between Finnish upper-secondary school students' English grades and gaming habits. Uuskoski's study found several statistically significant correlations between various areas of language learning and the participants time spent playing video games. The study concluded that those participants who spent a lot of time playing video games had statistically significantly higher English grades. Furthermore, the study also identified several video game genres, such as role-playing games, which were specifically linked to better grades. The results of the study, Uuskoski (2011) argues, indicate "a definitive and undeniable connection between learning English and playing video games among upper secondary school students from Southern Finland." (p.57). Similar remarks about the correlation between playtime and English language proficiency was expressed by the informants in this study. Several informants reflected in general terms that the more time they spent playing video games, the more their English skills and language competence developed or increased. In addition, as was pointed out by an informant, their inability to play for period of time, had, in their estimation, an immediate detrimental outcome on their English skills which was directly reflected in their school grade. Video games, therefore, may also have a more immediate and direct effect on players perceived and actual language learning.

Furthermore, the interviewees' reports are in line with a study conducted by Piirainen-Marsh and Tainio (2009) which examined the social activity of collaborative game-play as a medium for

additional and situated language learning among two Finnish-speakers. The instances of learning examined in the research indicated that players are not required to have a comprehensive understanding of English in order to develop their language proficiency. Rather, the collaborative and interactional engagement with the game allows the creation of affordances which the players apply in an instinctive manner. According to the study, players diligently observe and listen to the various affordances presented in gameworlds and utilize them to "...adopt gaming vocabulary as part of their interactional repertoire, memorize chunks of game dialogue, or reproduce or adapt these resources in appropriate contexts in order to engage with the narrative." (Pirainen-Marsh&Tainio, 2009, p.180) Similar remarks about the instinctive application of interactional elements within video games to their benefit were made several of the informants in this study.

In terms of what the interviewees consider as language learning, many replies appear to reflect a somewhat componential view of language and language learning, wherein language is seen in traditional terms as a larger entity that is comprised of smaller distinct areas of language learning, such as grammar or pronunciation. This is reflected, for instance, in the interviewees' relatively consistent use of terminology when discussing language learning, which is commonly used in formal educational settings. Moreover, when asked in more detail how video games had benefitted their language learning, several interviewees provided an account of the different areas of language learning where games had, in their opinion, proved useful. Furthermore, when describing the benefits in more detail, through practical examples, several interviewees seemed to connect specific characteristics of games to specific areas of language learning. For example, multiplayer games were often characterized as a form of skill building exercise in communication or pronunciation, while single-player games were often viewed as an activity involving reading and listening comprehension. Similarly, when asked to evaluate the effectiveness of video games as a language learning platform the tendency by some of the interviewees to offer a numerical scale similar to school-grading seems to tie the interviewees understanding of learning to a formal educational setting and could also be seen as indicative of a more componential view of language learning.

Surprisingly, when discussing language learning in the context of video games, several of the interviewees' replies seem to generally reflect a more traditional view of learning, despite the fact that as university students of English they would likely be aware of modern learning theories such as language ecology which, according to Van Lier (2004), distances itself from any forms of reductionism and bracketing focusing instead on examining language in a contextualized way. Van Lier (2004) argues that the prevalence of the componential assumption is still evident in modern

language learning settings, often manifesting as very specific focus points, for example, within standardized test. Similar trend is also noticeable in Finland with current intentions to incorporate a pronunciation section in the English matriculation examination, which is already distinctly divided into a listening comprehension and written examination. This approach and assumption, according to Van Lier, has resulted in an almost perfunctory practice of very defined and narrow parts of language within classrooms and "...dehumanizing and oppressive pseudo-assessments for the prestigious (and profitable) test publishers, at the behest of local and national governments, are almost inescapably led towards the industrial production of tests that are linguistically flawed, morally indefensible, and pedagogically harmful." (2004, p. 30-31).

The interviewees' replies appear to be in accordance with the underlying theories behind learners' understanding of language, as laid out by Van Lier. The componential assumption of language, according to Van Lier (2004), is rooted in descriptive linguistics and specifically in broad, all-encompassing entry-level survey courses to linguistics. Similarly, a few interviewees' replies about how video games were useful in learning English because they came in contact with the language through them at a young age seems to reflect a more computational view of language learning and the evocation of the sender-receive model. The replies seem to indicate, to some degree, a distinction between language learning and acquisition similar to Krashen's input hypothesis. It should be noted, however, that while the interviewees' replies seem to reflect the componential assumption, language learning in conjunction with such a practical medium as video games, and within close proximity of their studies which are often componentially structured, may be the most natural or intuitive way of discussing or explaining their learning experiences with video games. In particular, the frequently expressed views about the manner in which video games had been helpful in building the informants' vocabulary may be influenced by the fact vocabulary is as an area of language learning that is easily identifiable and typically the first thing introduced to students of a foreign language.

In the same vein, some of the interviewees' replies seem to indicate a dichotomy in the applicability or practicality of the language register of video games. For instance, when discussing the characteristics of the vocabulary the interviewees had learned by playing video games, the replies reflected, to some extent, a distinction between vocabulary that is common, useful, or germane and more specialized, uncommon, or infrequently used in naturally occurring interaction. Moreover, the interviewees' varied responses about the vocabulary of video games indicate a varied language repertoire, making generalized assumptions about the benefits of playing video games problematic.

In contrast to this, some replies seem to reflect more modern sociocultural or interactionist approaches to language learning and several characteristics of video games and the learning occurring within them, as described by the informants echo the ideals of sociocultural learning. For example, one interviewee recounted their experiences of language learning within a MMORPG by observing and mimicking native speakers, echoing central sociocultural concepts of semiotic mediation and appropriation. In line with this, many informants also, emphasized the benefits of the various social and interactional aspects of multiplayer games and their player communities. In such instances, the gaming activity was characterized as intrinsically social, and the specific rules, challenges, roles, and goals involved in engaging with multiplayer games echo the concepts of Activity theory. Supportive social and collaborative aspects of MMORPG communities in the context of second language learning have been relatively well documented. Rankin et al. (2006), for instance, note that MMORPGs manifest as complex social structures that have been designed to promote interaction between players and allow players to form group-affiliations. Furthermore, Rankin et al. (2006) point out that modern approaches to language learning emphasize learners' participation and engagement with the various cultural practices related to the target language and equate learning within MMORPG communities to building language competence through interaction with native speakers. In this capacity, Rankin et al. (2006) characterize video games as "...computer-based, highly participatory, multi-media environments that engulf the player in a virtual world that appears to be real." (p. 2) and as such, bridge the gap between foreign language learners and native speakers. Similarly, a few interviewees described an instinctive need and manner of language learning when playing video games. This could suggest that the interviewees did not make a clear distinction between linguistic proficiency and player proficiency, rather video games for the interviewee manifested as a single community of practice, within which English is the de facto tool of semiotic mediation that is utilized to teach, learn, collaborate, and reach shared goals or objectives. In other words, the interviewee's eagerness to become an effective player, or develop themselves within the community of practice, required them to learn and internalize the semiotic tools used by the other members within the community. In this regard, the reply also reflects the ecological perspective to language learning, whereby the native speakers may function as an affordance that provides learning opportunities and guidance to the learner, in addition to the built-in designs of learning. Moreover, this reflects the ecological perspective of language as rooted in interaction and relations, emphasizing that learners do not retain language, but rather learn to apply and interact within it. (Van Lier, 2004)

4.2 External language comprehension resources

This section of the interview required the informants to give information about the application of any external resources the interviewees may have used while playing video games in the framework of language comprehension. The aim of the question was to uncover, firstly, to what extent, and what types of resources were applied by the interviewees, secondly, outline any general or specific situations such resources were relied on, and finally, whether the interviewees found using external resources alongside playing helpful for their language learning. In this regard, the aim of the question was to also shed light on what the activity of playing a video game in a foreign language entails in a broader context.

All interviewees noted, to a varying extent, that they had used external language resources alongside video games. Likewise, all interviewees felt that using external language resources had a positive impact on their language learning and competence. For instance, those interviewees who reported using dictionaries, emphasised the effect they had in expanding their vocabulary. In general, the interviewees reported using three types of external language resources in conjunction with video games. Firstly, the interviewees reported asking help from other more proficient English speakers, such as siblings or parents, in translating specific words or general instructions. Secondly, several interviewees reported using a dictionary to translate unknown words or phrases. Finally, a few interviewees reported using various online resources, such as English walkthrough guides, giving step-by-step instructions for progressing and completing a video game. The replies about the manner in which the informants' applied external language learning resources during gameplay seem to indicate that semiotic problem solving is not a distinctly separate action, rather their use was frequently described as an integrated aspect of the gameplay activity. Some informants, for example, reported that they kept a dictionary at hand when playing semiotically challenging or difficult games. In this regard, the application of outside resources could be seen as an extension or addition of the activity of playing video games, whereby decoding semiotic messages becomes a part of the challenge offered by the gameplay.

Few interviewees reported that they used external resources rarely. One interviewee, who reported infrequently asking their sibling for help with translating specific words, felt that using external resources was primarily helpful at a meta-level, by lowering the threshold to ask for assistance with language learning, for example, with English homework. One emergent theme among the interviewees' replies was their ability to infer meaning from the gameworlds and their interactive

properties (see examples 10, 11). One interviewee, who was specifically keen on strategy games, reflected that they seldom used external resources, due to the fact that they were able to habitually infer the meaning of the language and specific words from the context of the game environment. Similar observations concerning inferred meaning were made by several other interviewees. Particularly, those interviewees, who reported using a dictionary to translate unfamiliar words or expressions presented within the game environments frequently reflected that while using a dictionary was helpful, reliance on them became more occasional, the more informants progressed, and their language competence increased. The interviewees, likewise, emphasised that they were able to successfully deduce or infer meaning of the language from the context of the video game and that the multimodal elements of the games allowed them to search the game environment for clues about potential meanings. Likewise, reflecting on the learning process, one informant noted that once learning became routine-like, the multimodal presentation of video games alone was sufficient for further language learning.

- (10) Yes, I used dictionaries when I was younger but that did not last that long because you learn to deduce the meaning of the words. And of course, you would rather not interrupt the game for that reason.
- (11) When I was using them for translating they pretty much helped just with the vocabulary. In the end, when it sort of became a routine to learn the English in games, the game itself quite often offered the solutions. For example, in the game they might have been referring to something which was present in the scene or something similar. And that in a way was enough to learn the language.

The informant's replies about the usage of external resources indicate that players are not only highly motivated to play video games, but also eager to learn the language in which video games are presented. This is reflected, for instance, in the informant's active and autonomous effort to utilize various external resources that offer semiotic solutions. This is further corroborated by the fact that the informants were willing to pause the gaming activity in order to seek solutions to emergent semiotic problems. The informant's motivation in using external resources was varied. Some informants felt that the usage of semiotic resources was sometimes required, in order to, either progress within the game after facing an obstacle, the solution to which could not be directly inferred from the semiotic clues offered by the game, or to become a more adept or fluent player. On the other hand, some informants seemed to place more value on the narratives or stories video games presented and resorted to external resources in order to ensure they understood the aspects of story-telling represented by video games. Similarly, the informant's replies about the decreasing need to utilize

external resources due to the contextual clues offered by video games indicate that while engaging with a game, players diligently examine the rich semiotic clues offered by the games and successfully apply and internalize them to reach semiotic solutions without consulting external resources. The semiotic processes described by the informants in this regard, seem to be characterized by a type of intuitiveness and sensitivity which reflect, to some extent, the aspects of incidental or situated learning. Rather than making active and cognizant effort to decode meaning within video games, the informants seem to be learning passively and progressively, the further they progress in a game. As Gee (2003) points out, to the players, the contextualized information offered by video games frequently “comes free” (p. 18). Likewise, the manner in which the informants were able to attain positive learning results and experiences by decoding emergent semiotic problems from the various interactive modes of representation, seem to echo the ideas of the Zone of Proximal Development and scaffolding according to the SCT. For instance, the informants reflected that the level of language proficiency required by video games, in particular during the early stages of their language learning, was slightly higher than their competence. Due to the assistance offered by the various virtual entities and the composite of various modalities, however, they were able to overcome semiotic barriers and challenges. In this regard, the virtual entities and varied modes of representation within video games could be considered as functioning as the scaffolding, allowing players to achieve learning outcomes otherwise out of their reach.

Previous research has shown that video games offer a multifaceted platform that is very effective for construing meaning and therefore a relevant aspect, in particular, for second-language learning. The interview findings regarding inferring meaning from the multimodal elements of the game environment are supported by Gee’s (2003) research on situated meanings, literacy and semiotic domains within video games. Gee (2003) argues that video games, which often simultaneously present a wide array of multimodal elements, such as, visual, textual, and auditory, are the “par excellence” of human multimodal constructions. (p.18). The comprehensive range of the multimodal elements may, therefore, allow players to infer meaning in video games more effectively in comparison to more traditional multimodal texts. Furthermore, in line with the above findings, Ensslin (2012) notes that video game interfaces combine all types of semiotic relationships: icons, symbols and indexes. Ensslin (2012) points out that video game interfaces are predominantly iconic and indexical, focusing on “...resemblances between virtual and actual world and logical cause-and-effect patterns.” (p.134), whereas symbolical signs, such as words, are by comparison less prevalent. Ensslin (2012) expanding on Gee’s (2003) notion of video games as ‘semiotic domains’, emphasises

that players must utilize multimodal cybernetic and communicative strategies that lead to successful gameplay. Such strategies, as Ensslin (2012) points out, are:

...anything but logocentric or monomodal but include a wide range of representational modes such as written and spoken language, still and moving images, sound, noise and music. They also include the haptic sensations arising from physical interaction and contact of skin with the hardware. (p.118)

The co-occurrence of all semiotic signs and the superimposition of representational modes, therefore, likely facilitates more effective or easier meaning making within video games in the context of second language learning. Similarly, the emphasis on iconic and indexical signs may be helpful, in particular, for beginners of second language learners, as players can rely on more general or universal modes of representation. It should be noted, however, that while video games emphasise iconic and indexical signs, the exact balance between the three semiotic relationships is heavily dependent on the genre, and even the specific video game in question. As was noted by some interviewees, narrative-driven games or role-playing games, for instance, often offer more symbolical signs, specifically textual signs, in comparison to other genres, and were therefore found helpful in facilitating the learning of English. However, further studies, into how exactly, and to what extent, the multimodality of video games, or even specific genres, facilitate language learning, would be valuable, particularly to the various interdisciplinary fields seeking to harness the pedagogical potential of video games. The findings also raise questions about the manner in which players come to learn a second language through video games. As it has been discussed, while players may utilize external resources alongside playing, as a more conscious effort to language learning, primarily they engage in incidental learning that often occurs on the periphery of their language competence.

4.3 Gaming hobby and school motivation

This section of the interview explored a possible connection between a video game hobby and school motivation. Previous studies have shown that motivation in language learning has an extensive impact on the effectiveness of the learning process. Modern learning practices, particularly in the context of language learning, have argued for a personalized or tailored approach allowing learners to apply their knowledge in a setting that is subjectively meaningful and therefore motivating.

When asked whether playing video games or having a video game hobby motivated the interviewees to study English at school, nearly all respondents replied positively. While one interviewee felt that

the language register of video games was different from the one taught at school, to the extent that games did not directly encourage studying in a formal setting, several interviewees described the relationship between video games and classroom English as a reciprocal one. That is to say, the interviewees felt that studying English at school was beneficial to their video game hobby, and vice versa. Those interviewees who found that video games increased their motivation to study at school reflected that formal education allowed them to both, understand video games more comprehensively, and to enjoy video games as a continuous experience that is uninterrupted by semiotic barriers or limitations in their linguistic competence. One interviewee, for example, felt that studying English at school aided in understanding video games better and therefore functioned as a highly effective intrinsic motivator. Similarly, another interviewee felt that playing video games and learning English in a classroom setting complemented each other due to their perceived proficiency in both domains, as well as the willingness to display language proficiency or skills acquired outside the classroom. Another interviewee reflected that video games were motivating due to the fact that learning English at school firstly, deepened their understanding and interest towards video games, and secondly, helped in making the playing experience a continuous, uninterrupted process. (see examples 12, 13, 14)

- (12) Yeah, absolutely. I was very interested in learning English, especially during primary school: I liked it because I noticed that when I studied English at school I also understood the video games better. It motivated me very much.
- (13) Yes, actually. Video games and learning English at school supported one another. Because I knew I was good at English I enjoyed playing video games and using the language that way. And on the other hand, I wanted to show my skills at school. They complemented each other and developed that way.
- (14) Very much so. Because I was interested in games and enjoyed playing them I wanted to learn even more about them. On top of that using a dictionary and the internet was pretty arduous, in a way. It was more convenient when you learnt the language in school so you understood things right away and didn't have to interrupt the game.

One informant, on the other hand, remarked that video games were motivating because they helped them gain a better understanding of the English classroom content. In addition, the informant noted that video games offered a venue of learning that was interesting and non-mandatory in comparison to traditional schooling material, which they found uninspiring. Interestingly, one respondent reflected that their interest to play, in particular, video games with historical settings functioned as an

incentive directing them towards other formal and informal mediums with the same genre or subject. (see examples, 15 16).

- (15) Yes, it had a positive effect and it was also helpful because I better understood what was going on. Our English school books were really boring to be honest, and it was nice to use the language in a setting where it was voluntary and interesting.
- (16) Yes. In the sense that while the games I played were historical or based on a historical setting, so I wanted get more information or entertainment touching upon the same themes and that led me to read a lot of books on the subjects.

A few informants also noted that due to their video game hobby they felt that their language competence was, to some extent, higher than the level of difficulty required in a classroom setting, to the degree that they lost interest in class. One of the respondents felt that while video games did not directly motivate to independent study, they may have motivated in an “indirect” manner. Another interviewee reflected that they lost interest in English classes, to some extent, because they felt they lessons were not challenging enough.

- (17) Possibly, in the sense that I was talented in the language because I played games, and English was pretty easy for me at school. So maybe in an indirect way. I liked English because I was good at it but it didn't motivate me study it on my own as such.
- (18) Yes, in a way. Although, at some point studying English at school became a bit too easy for me and I wasn't so invested in it anymore.

The informant's replies indicate that video games may function as a potentially effective source of motivation to study English as foreign language. Furthermore, as was reflected by the replies, video games as a form of popular culture may lead players to other forms or culture within the same genre. In the context of pedagogy, motivation has been traditionally viewed as either intrinsic or extrinsic, or stemming from external reward or subjective, internal gratification. More recent, studies, however, have pointed out the issues and limitations in the traditional, fixed twofold motivation classification. These issues manifest, especially in cases where the threshold between intrinsic and extrinsic motivation meet. Murray (2011) et al., for instance, make a compelling argument for viewing motivation as a “...complex subsystem nested in SLA systems...” (p.62). Instead of a fixed classification, Murray et al. (2011) describe motivation as a fundamentally dynamic phenomenon that encompasses various social and cognitive factors and their manifestations, such as, attitudes, interests,

needs, and values. This classification of motivation seems to be more in line with the findings of the interview, as the motivation described by the interviewees cannot be characterized as strictly intrinsic or extrinsic. What is more, the informants' reflections about the reciprocal relationship between video games and motivation to study in a classroom seem to indicate that video games may function as an effective conduit of learning between formal and informal settings. In this regard, classifying the informants' motivation as either intrinsic or extrinsic is problematic, as their motivation seems to have the dynamic character mentioned above.

4.4 Supportive features or genres

This section of the interview required the informants to give information about whether certain types of games were found particularly helpful in facilitating the learning of English. The underlying aim of the question was to identify any specific game mechanics or features that may not be as genre-specific. As it has been pointed out, the amount and quality of linguistic elements and affordances in video games may vary to great degree. Information and awareness of which genres or features learners find interesting or engaging is therefore relevant and valuable, in particular, among the emerging pedagogical fields that seek to "gamify" the learning process. As it has been discussed, a fundamental step in effectively combining video games and education, is the discovery and awareness of the different functionalities in commercial video games and, in turn, how players interact with them.

When asked to mention any specific genres or types of video games that were particularly helpful in learning English, several interviewees noted the usefulness of extensive, narrative or story-driven video games. The interviewees found story-driven games helpful due to a variety of reasons. Firstly, story-driven games were found immersive or engaging and their stories interesting or motivating. Furthermore, some interviewees felt that narrative video games often fostered agency within the game environment. One respondent stated:

- (19) I would say games that have a lot of dialogue or emphasise the storyline. Or other types textual content. Sims, Fantasy-genre games, adventure games. Sims games, in particular because they encourage you to make your own story, in a way.

Secondly, a great deal of emphasis was given on the large amount of textual language input or different types of texts story-driven games contain, including, not only texts relating to the main narrative but also other sub-texts that have to do with, for instance, the game's narrative exposition, (often referred to as *lore* within gaming communities) as well as, more technical aspects, such as the

controls or settings of the game. One respondent, whose interest towards video games begun before any formal English education, for example, noted that understanding the controls of the game was, at first, instrumental for progression or completing the game, whereas understanding the storyline became a more significant factor afterwards. Interestingly, the respondent also felt that their interest towards video games was, to some extent, influential in initiating their motivation to learn English:

- (20) Extensive, story-driven games. *Final Fantasy* comes to mind. I have to say though, when I was a small boy, one of the first games I had was *Alundra 2* and I know that it was the game that started my pursuits in English. In *Alundra 2*, for example, there were certain powers the character could acquire but because I didn't know how to read English back then it took me a really long time to understand them. In general when dealing with the controls of the game I had to understand the instructions. Later on the story and understanding it played a larger role.

Correspondingly, one respondent who felt that while multiplayer games often had less textual resources to learn from, and did not directly enforce interaction, noted that narrative, single-player games required language competence:

- (21) In my case, story-driven games. Not so much multiplayer games because they don't force players to communicate and interact. Likewise, multiplayer games rarely have a lot of textual content. In single-player games, on the other hand, you are forced to acquire the language. For example, *Baldur's Gate*, *Icewind Dale*, *Sacrifice*, *Halo*. Those games had a lot of text in them. *Halo*, for example, was story-driven and it was a very immersive experience. You were really in the game.

One emergent theme among respondents who found narrative video games helpful was the usefulness of role-playing games. According to the respondents, role-playing games, in particular, fostered their English language skills because their stories or plotlines were found interesting and often heavily emphasized player choice or agency. Again, some respondents noted that a certain degree of competence in English was required for them to understand the story, which consequently motivated them to learn English. One interviewee, for instance, while emphasizing the effect of the multiplicity of languages in role-playing games, felt that learning the language was instrumental in exhaustive understanding of the story: "I was especially interested in the storyline. I wanted to understand and know the story as thoroughly as possible."

Another recurring point raised by the interviewees was the usefulness of online multiplayer games and their communities in learning English. Those interviewees who brought up the effect of online video games, consistently noted their positive influence on several different communicational aspects

of language learning. One respondent estimated that multiplayer games, in terms of language learning, were, in fact, more supportive than single-player games. Another respondent noted that multiplayer games, specifically massively multiplayer online role-playing games, (MMORPG) were beneficial to language learning due to continuous English interaction with other players within the game environment:

- (22) Massively multiplayer online role-playing games, like *World of Warcraft*. There was so much contact with people who speak in English and you learn from them.

Additionally, points were made by some of the interviewees regarding the usefulness of communities operating within or around multiplayer video games. The interviewees noted that using English was not limited to the actual game environment but extended to other online communities and their platforms, such as, internet forums. One interviewee, for instance, recounted the usefulness of using an in-game chat function and participating in role-playing within a MMORPG:

- (23) I used to play *World of Warcraft* a lot and talk with other players on the chat and that helped with communicating in English. One time, I ended up in a role-playing server where players wrote quite extensive backstories for their characters and I did that for a while, it helped with my writing skills.

The experiences shared by the interviewees regarding MMORPG's are similar to findings made by Thorne (2009) about an instance of transcultural interaction between English and Russian-speaking players within *World of Warcraft*. During the short encounter, Thorne (2009) identified several promising characteristics that indicate the efficiency of MMO's for language learning, including language production, naturally occurring communication, repair sequences, sharing of expert knowledge, collaboration, and the formation of close interpersonal relationship. Similarly, the findings are also supported by Kallunki's (2016) quantitative study, which surveyed European World of Warcraft player's assessment of the game as a platform for learning English as a foreign language. The survey concluded that *World of Warcraft*, due to its multimodal presentation and motivational or interactive properties, may be beneficial for foreign language learners in various areas of language learning, such as vocabulary or communication.

It should be noted, however, that the extent of interactivity and communication within multiplayer games is dependent on the player's willingness to engage with other players. It is therefore likely that players have varying experiences about the impact multiplayer games have on their language learning

skills. An outgoing or talkative player, for instance, may find that online multiplayer games offer an effective platform for language learning by allowing them to practice foreign language learning in a platform that is fundamentally interactive and social. Conversely, more reserved or introverted learners may find single-player experiences with extensive stories more enticing and effective, as they offer a platform where they may engage comfortably. The informant's replies appear to reflect this to some degree. Informants who did not find multiplayer games as effective, emphasised, on the other hand, the effectiveness of story-driven, narrative-focused single-player video games.

The informant's replies about the characteristics of various multiplayer games and their communities seem to reflect the ideals of sociocultural learning. In particular, the communities within games seem to allow players to naturally move toward high levels of professionalism with the help and guidance of other, more proficient players.

Several interviewees also felt that multiplayer games differ from single-player games in that they foster more "natural", communicative, or interactive language learning. Specifically, the respondents felt that players of multiplayer games are actively participating in language production by formulating sentences, and taking part in dialogue that can be both, object-oriented and related to the game environment, or conversely, more casual, spontaneous and distinct from any specific game-related elements. One respondent stated, *"Above all multiplayer games helped me with using the language myself and especially spoken interaction."* It was also pointed out by a respondent that learning spoken interaction within multiplayer games was, due to its authenticity, more effective in comparison to, for instance, scripted dialogue exercises during English lessons. One respondent also found that using written messaging systems, such as an in-game chat, was helpful with learning spelling. Another respondent, also felt that the role of grammar was emphasised in multiplayer games since it is required for fluent and intelligible interaction. On the other hand, they also felt that multiplayer games are helpful with different English dialects as well as non-standard language:

- (24) Not so much when I was younger but more nowadays. Yes, in a certain way. I think multiplayer games emphasise interaction skills, in particular. I think that especially the fact that you have to formulate your own sentences helps. But also, because when you speak with other players you hear different dialects and language that might not be as standard, as it is in single-player games. In a way, it is more organic.

Similarly, one respondent noted that multiplayer games helped them to reach a certain degree of fluency in spoken English interaction. The respondent, likewise, stated that multiplayer games require

interaction that is both fluent and fast. Furthermore, they also felt that, in terms of spoken interaction in English, multiplayer games continued to be beneficial even during their tertiary education:

- (25) Yes, even nowadays. For example, *Counter-Strike*, because when I started at the university I wasn't actually that good at speaking, I wasn't fluent, in a way. In online games, even if there isn't that much discussion going on, you have to communicate in a manner that is intelligible, fluent, and fast. It still develops my skills, and is probably the single greatest asset.

In line with the above findings, Ensslin (2012) points out that concepts often ascribed to more conventional understanding of competency and literacy, such as communicative, generic, and social competency, may be extended to video game communities, in which the language is often distinctly encoded. Ensslin argues that in order to be an effective participant of various gaming communities, the player is required to reach "high levels of specialised discursive competence" (2012, p.16). Furthermore, specifically in terms of online video game communities, Ensslin emphasises the concept of transliteracy, which includes the various communicative practices applied within digital mediums. Thorne et al., (2009) likewise, argue that social virtualities and MMO games are "...the most socially and cognitively complex forms of interactive media currently available." (p.808).

In the framework of second-language learning, the concepts of discursive competence and transliteracy raise questions about the speakers' ability to fluently operate in these domains within the restrictions of their general second-language competence. This is specifically relevant in any role-playing scenarios where the players are required to 'stay in character' and adopt language and register that is appropriate to specific themes and situations. Any failures or inadequacies in this regard, would be noted and reacted to by other members of the domain. The interviewees, however, did not mention or indicate any difficulties operating in such domains but instead noted their usefulness in second-language learning.

Similarly, the findings about the usefulness of gaming communities, are in line with Gee's (2005) notion of *affinity spaces*. Expanding on the concept of a community of practice, first introduced by Jean Lave and Etienne Wenger, Gee argues that the concept of a community of practice (CoP) is, to some degree, inaccurate, due to the fact that 'community' implies membership and connotes closer 'belongingness', therefore overlooking instances where the two are not easily distinguished. In the framework of video game communities, for instance, the notion of membership is problematic as

participants often operate on a spectrum, as opposed to more rigid structures. That is to say, players may join, move, and operate, with relative ease, to a video game community and within it.

As a methodological solution, Gee (2005) introduces a more open and informal alternative of semiotic social spaces (SSS) which are composed of *generators*, or sets of signs and their potential relationships, and *portals*, which give access to interact with the signs. Gee further distinguishes a particular type of SSS called affinity spaces which are relevant, in particular, to various video game communities. Affinity spaces, according to Gee (2005), are non-exclusive venues of informal learning that are formed by learners, both experienced and inexperienced, working towards a common goal through intensive or extensive, individual or distributed, dispersed, and tacit knowledge. Young learners, Gee argues, are increasingly active with affinity spaces and view them as “...*a different and arguably powerful vision of learning, affiliation and identity...*” (2005, p. 231). Affinity spaces related to video games, therefore, may be extremely valuable and versatile venues of informal second language learning, in particular, for young learners.

In terms of how the informants conceptualize language learning, the replies about the amount or saturation of language input in certain video game genres seems to reflect, to some extent, the computational assumption as laid out by Van Lier (2004), which considers language learning as based on an exchange of information that primarily functions as the learner’s language input and output. In this regard, the computational assumption views language learning as essentially rooted in the brain’s information processes. (Van Lier, 2004)

4.5 Games as an extramural medium

This section of the interview required the informants to evaluate the effectiveness of video games, as a platform of extramural English. In addition, the informants were asked if they thought that video games as an extramural medium have some characteristics or features that are specifically beneficial for foreign language learning.

When asked to consider the effectiveness of video games for learning English in comparison to other extramural mediums, for instance, literature, films or music, several informants, while emphasizing the subjectivity of extramural learning, felt that video games had been the most useful medium during their formal education (see examples 26, 27, 28, 29). Two distinct reasons emerged from this. Firstly, a commonly held view amongst the informants was that video games necessitate a level of language competence to be played. Secondly, the informants emphasized the interactivity and contextuality of

video games. One informant noted that, particularly online video games were more effective among the range of extracurricular mediums because they heavily emphasised and required constant and active interaction in English. Moreover, the informant felt that other mediums were, by comparison, more passive and described learning through them as less frequent and salient. Similar points were raised by another informant, whom, while equating video games as an extramural medium to reading literature, emphasized the distinctive capacity video games have in teaching language production or interaction and confidently assessed them as the most effective platform in this regard. On the other hand, one informant whom likewise, estimated video games as one of the most effective mediums highlighted the manner in which language competence or reaching a level of proficiency is an important aspect of being a successful player. This assessment was also shared by several other informants throughout the dataset. The informant also noted that learning from a video game is natural due to their contextual representation and that video games are decidedly unique from other extramural mediums.

- (26) I think it's a slightly better way to learn, but of course it depends on the individual. However, for me games have worked the best.
- (27) Games were far more important to me because you have to continually interact with other people in English. When you watch television, for example, you just passively listen, and you may understand something but some things are lost to you. You might learn some random words or things but rarely anything significant. In video games, using the language yourself is played a big role.
- (28) I think the effect that especially single-player games have is comparable to, for example, reading a lot of books. At least in my case. Although I did read a lot, as well, so it might have supported me that way too. That's how I would perhaps approximate video games as a medium. However, especially in terms of producing language or speaking in English, I think video games are the best medium for that, bar none.
- (29) I feel strongly that games are one of the most helpful mediums because you are required to have a certain level of understanding about the language to progress. Also, the way you learn English from games is in a way very organic because it is structured around the game and the context. I would argue, based on my experience, and what I've heard from my friends, that games are one of the best mediums. I'm sure TV and films help as well, but games have something that they don't.

Somewhat differing to the above examples, a few informants brought up the effectiveness of literature in English as an extramural medium (see example 30). Discussing this question, one informant reflected that literature may be the most efficient medium for advanced learners, while noting that

comparing video games and literature was difficult due to the differing levels of competence they required. Another informant noted that particularly in upper secondary school, reading literature in English was very helpful. Interestingly, when asked if the informant's video game hobby had in any way motivated them to read in English, the informant replied positively. Similar views were expressed by another informant who felt that video games functioned as the foundation to understand other English mediums (see example 31).

- (30) I would say you learn more through video games, than from watching TV with subtitles, or at least faster. Literature, on the other hand, is a bit problematic because you need to have pretty extensive skills to read a book in English. If you are able to read serious literature, I think it's maybe the best way to learn. Especially advanced language skills.
- (31) I'd say that video games created the basis for me to understand other venues of entertainment in English. Most of the films, tv-series, and so forth, are subtitled, so I didn't necessarily learn English directly from them. Games were the primary source for me.

When asked to reflect on whether video games, as an extramural medium, have any specific characteristics or features that facilitate language learning, yielded varied responses from the interviewees. A view expressed by some the informants was that the effectiveness of video games for language learning arises from the fact that they were regarded as a pastime activity or hobby, something that the informants enjoyed and were genuinely interested in, contrary to any compulsory formal schooling or intentional learning (see examples 32, 33). One informant, on the other hand, reflected that games are typically long, time-consuming experiences during which various linguistic affordances are often repeated (see example 34).

- (32) Well, maybe the fact that it is a hobby that you like. Of course, this is something that applies to all hobbies, like reading, and if you enjoy it you learn without acknowledging it, by accident.
- (33) Yes, firstly, it's something you do on your free time. You are interested about them unlike something that might be force-fed on English classes.
- (34) Some games require you to invest a lot of time into them and they are also pretty repetitive. You might see the same instructions, phrases or things like that multiple times and they stick to your mind. For example, a character might have phrase that it keeps repeating and it might have some information about how the language is structured and it stays with you.

Several interviewees also felt that video games facilitate language learning because they are fundamentally interactive platforms and achieve this in various ways (see examples 35, 36, 37). The interviewees noted that interactivity in video games can occur, firstly, in a more general sense, between the player and the game itself, secondly, between the player and different virtual actors within the game environment, such as NPCs, and finally between other players in online or multiplayer games. Correspondingly, the interviewees felt that video games are a medium that often heavily relies on player choice, or agency. One respondent, for instance, stressed that video games are unique from other mediums in the sense that they include elements of interactivity and agency, such as dialogue choice. Similar to this, another informant commended games for granting the player a sense of meaningful and interactive control within a complex and immersive world.

- (35) Of course, there's the fact that you are interacting, either with the game itself or other people who are playing with you. It's simply an easier way to learn.
- (36) In comparison to other mediums, although all of them are immersive in the sense that you can get lost in them, video games have an element of activity. You can interact in that medium and you are faced with choices, either in dialogue options or by player actions. There is an element of interaction in games which allows better language formation. The game reacts to what you say or do.
- (37) Games are very entertaining and right from the start hook the player into an immersive environment. Some games are so intricate that it feels like you are playing a role in a movie. But in terms of entertainment, games are unbeatable. Also, the fact that you are in charge of the decision-making and it also affects the game world itself. You get the sensation that your choices matter.

Similar to the examples in the previous sections, another commonly expressed view amongst the interviewees was that language proficiency was a significant factor in facilitating their gaming hobby (see examples 38, 39). The interviewees reflected that, as second language speakers, a degree of understanding or proficiency was often required in order to be successful or progress in video games. One interviewee, who also emphasised the immersive and motivating characteristics of the interactivity of video games, felt that proficiency was a fundamental element of playing games presented in English.

- (38) I think the fact that you cannot progress in a game unless you know the instructions and when the instructions only come in English you have a compelling need to understand the language.

- (39) Games require you to understand the language, that I would say is the most important factor. Also, they are interactive, you are actively doing something at all times, and that keeps you engaged in them. Not to forget the fact that games are so interesting. So, you are motivated to learn more, as well. I learned from games because they were interesting to me, more so than films or TV. I am interested in TV-series as well but it's nowhere near video games.

The views expressed by the informants indicate that as an extramural medium the informants consider video games as a highly effective and valuable venue for additional language learning. The effectiveness of video games among other extramural mediums, likewise, was estimated by some interviewees to be more useful or pertinent than other, more traditional mediums. Additionally, some of the replies suggest that having a video game hobby may function as a conduit to other English mediums. The interview findings, however, did not reveal how exactly this connection is formed. In the context of pedagogics, several of the views made by the informants seem to be echo the ideals of modern sociocultural approaches to learning, whereby the learners build on their proficiency through active participation and interaction within a supportive community in a meaningful manner. Specifically, the commonly held view about the broad range of interactivity involved in video games, concerning both the interaction between players or with the various virtual entities within the game.

In terms of the characteristics that are beneficial for language learning, the views expressed by the informants echo several learning principles of good video games as identified by Gee (2007b). The informant's assessments about the interactivity and immersion of video games seem to reflect the Active, Critical Learning and Identity Principles. The former, according to Gee (2007b), is achieved when the learning environment is fundamentally designed to foster active and critical learning, rather than passive. The latter, on the other hand, is formed when the player is given the opportunity to assume identities that are subject to "...real choices (in developing the virtual identity) and ample opportunity to mediate on the relationship between new identities and old ones." (Gee, 2007b, p. 64) In the same way, the replies reflect the Committed Learning and Practice Principles, which according to Gee (2007b), are realized when learners are dedicated to engaging with the learning environment, that is essentially appealing and entertaining, in a manner which conflates their virtual and real identity. These principles, as Gee (2007b) notes, are also characteristics of active and critical learning, in strictly educational settings.

5 Discussion and conclusion

This section provides a summary of the findings and analysis of this study while examining and discussing their relevance in the wider context of language learning pedagogy and possible implications in the application game-based learning. Furthermore, the section critically considers the validity of the findings and suggests approaches and points of interests for future studies.

This study set out to establish an account of the experiences and perspectives of Finnish university students of English with regards to video games as a platform for extramural English language learning. In more detail, the study examined whether video games, as an engaging cultural medium, were considered a beneficial extramural platform, what type of subjective language learning experiences the informant's as video game hobbyists and language professionals in training had, and what characteristics or features typical to video games were relevant in this regard. Approaching language learning in the framework of modern sociocultural and social interactionists views of learning, the sample findings of this study suggest that having a video game hobby may have the potential to create effective extramural language learning that is realized in a manner which supports several key ideas and ideal circumstances of these approaches.

To summarize the findings of this study, all informants found that their gaming hobby had advanced their English competence, and the majority of the informants estimated their influence as substantial or significant. In terms of the value or quality of learning, the findings indicate that the language learning occurring when players engage with a video game is not disposable or restricted, rather, players learn and adopt language into their repertoire and long-term memory while applying it instinctively when needed, extending to domains which may not be directly connected to video games. The findings indicate that video games may have a positive effect for various areas of language learning which is achieved through the diverse features, affordances, and learning principles within video games that often differ depending on the genre or type of the game. Overall, the specific learning experiences reported by the informants were varied and corresponded with their gaming habits and preferences. One emergent finding of this study is that, according to the informants' replies, different types and genres of games, may be particularly beneficial in improving language skills in specific areas. For instance, based on the findings, a distinction was frequently made between the learning occurring through single-players games and multiplayer games. In the former instance, in particular narrative-driven or role-playing games were found advantageous for learning vocabulary as well as reading and listening comprehension. Multiplayer games, on the other hand, were

frequently mentioned in the context of language production and a wide array of interactional and pronunciation skills. These findings are similar to a recent quantitative study by Uuskoski (2011) which found a significant statistical connection between Finnish upper-secondary school students' English grades and time spent playing video games.

According to the sample of this study, video games have several distinct characteristics that may have the potential to foster more effective language learning. The findings suggest that video games as a medium may have the capacity to foster commitment and motivation that allow for meaningful, passionate, personal experiences and development that strongly resembles the characteristics of affinity-based learning as laid out by Gee (2005). Examining a possible link between a gaming hobby and school motivation, the study found that having a video game hobby may spur motivation to study English in classroom, extending to a degree whereby the informants acknowledged a reciprocal beneficial connection between their gaming hobby and formal education. The findings indicate that video games motivate learning in classroom context by advancing the students proficiency and fluency with their gaming hobby. That is to say, the skills the informant's learned in a formal school setting translated to more fluent, uninterrupted gameplay. On the other hand, the competence players acquired from playing games drove them to display their language development and proficiency in the classroom. In this regard, having a video game hobby may realize the ideals of sociocultural approaches to learning. By conflating formal and informal domains of learning and bridging the gap between entertaining popular culture and formal education, video games may allow students to attain meaningful and personal learning experiences in both domains. In other words, the learning is merged into the players' sociocultural framework. Moreover, engaging with the target language through a cultural medium, in particular when interacting with other L2 and native speakers within multiplayer games, realizes the ideals of modern socio-interactionists approaches to learning.

In the wider context of pedagogy, taking into account the widespread popularity of video games as a form of entertainment and pastime activity particularly among children, the findings about the influence games may have on learners' motivation can be applied by teachers to further foster motivation in students by pointing out the utility of studying English in the context of their gaming habits. In particular students who are passionate about games and identify them as a hobby may find the acknowledgement of their vested interest to study English as encouraging. Likewise, to further bring together the informal and formal domains, teachers and material publishers may also consider including video games as topics or themes in classroom and learning materials, similar to more traditional cultural mediums such as literature, music or films.

What is more, the study found that as an extramural medium the informants hold video games in very high regard. When comparing the effectiveness of video games with other extracurricular activities, such as literature or films, several informants considered video games as the most influential or beneficial for language learning. These findings indicate clearly that, according to the informant's estimation, video games can function as effective extramural tools for language learning and as such offer a strong mandate for future research and experimental applications in formal school curricula and educational settings. The findings revealed several reasons and characteristics that differentiate video games from traditional extramural mediums. Emphasis was placed on the essentially interactive, immersive, and entertaining nature of video games, as well as the fact that learning the language was considered obligatory for being successful within the game.

Furthermore, according to the findings, the manner in which video games are designed and interact with players, through various modalities or modes of representation often allow for enhanced and intuitive meaning making, leading to gradual, naturally occurring learning experiences for foreign language learners. The learning experiences, described by the informants and the manner in which players acquire and internalize new information from video games while advancing towards higher proficiency and autonomy by interacting within the game environment and its communities of practice, resemble the features of legitimate peripheral participation. Unique to video games, in addition to the interpersonal assistance offered by other players in various multiplayer scenarios, the guidance players receive on the peripheries of communities can also come by way of various digital entities, such as NPCs. The digital entities are typically designed to offer support in an ecological manner that resembles scaffolding, which allow players to reach positive autonomous learning experiences with minimum guidance and interruption.

Similar to the findings described by Piirainen-Marsh & Tainio (2009), the findings of this study suggest that players conscientiously, and often instinctively, observe, learn, and internalize language from video games in a manner that resembles situated and incidental learning. Based on the interviews, video games as an entertaining, engaging and agency-inducing medium seem to allow players to become fully immersed in the gaming activity, while learning emerges from gradual interaction and various activities within the virtual environment. In this regard, video games, as interactive environments filled with meaning that is progressively revealed, echoes the ecological perspective of learning. Video games, therefore, may be effective learning platforms, in particular,

for children as the focus of the activity is centered on play and having fun while the learning is essentially informal, relaxed, entertaining, and easily approached.

What is more, one significant finding of this study is the players' intuitive ability to successfully extrapolate meaning from the interactivity, contextual clues, and multimodal elements within video games. These findings are in line with Gee's (2007b) suggestions about the potential video games hold as highly complex multimodal and situated experiences. The findings of this study suggest that players heavily rely on multimodal information when engaging with a game and their significance is further increased when facing semiotic difficulties within the game environment. This may extend to a degree by which players are able to extrapolate meaning of linguistic elements that exceed their level of language competence by a wide margin. Additionally, the increasing effectiveness to operate within the rich semiotic environment of video games seem to reflect the characteristics of the ecological perspective. Previous research about the effectiveness of multimodality in video games has pointed towards qualities that are rooted in the various design principles of video games, such as the tendency to provide situated information sparingly and only when required. In particular, the manner in which video games situate meaning may be a valuable resource in the extraction of meaning from game environments. As Gee (2007a) points out, video games continually situate meaning by presenting words in relation to other types of multimodal information which are adjusted according to the varying interactive situations. However, more thorough research about the specific cognitive and semiotic processes are needed for an accurate understanding of how players utilize multimodal information during foreign language gameplay.

The effectiveness of the multimodal representation in video games is also echoed in the findings about the manner in which the informants applied external language comprehension resources while playing. The findings revealed that, in particular at the onset of their hobby, the informants often used resources that allowed them to overcome emergent linguistic obstacles during gameplay and that the use of the resources decreased the further they progressed. The types of resources applied varied from using dictionaries to asking help from more proficient speakers, and seeking information online, for instance by reading English walkthrough guides. These resources, while often temporary or limited in scope, indicate that the players' are highly motivated to learn English as their fluency in the language translates to more seamless and adept gaming experiences. Likewise, the findings indicate that having a gaming hobby is not strictly limited to the gameplay activity but may extend to a wide range of communities and practices that operate around video games.

Similarly, the findings of this study suggest that the multimodality of video games may be a specifically advantageous characteristic in the framework of language learning. While previous research and the findings of this study point towards the rich multimodal game environments, the specific reason for their effectiveness was not revealed by this study. Although the analysis suggests that this may be partly due to the fact that, when facing problems or obstacles, players may examine and seek solutions from the whole range of interactive modalities in video games, more focused research about the specifics of the semiotics in a rich multimodal virtual environment are needed to establish the validity and extent of these findings. Previous studies have yielded positive results by applying the methods of Conversation Analysis in examining emergent issues during gameplay. Future studies may, therefore, consider applying CA methodology in examining the semiotics of L2 players. What is clearly suggested by the interview findings, however, is that players take advantage of the multimodal features and interactivity in which games are represented, and seem to do so to a greater degree than previous research has established. In the context of pedagogy, these findings can be taken into consideration when designing game-based learning environments and tools. Future studies and educational material publishers may examine and consider the potential of rich multimodal digital environments, in the development of modern language learning materials or learning environments.

While the findings of this thesis indicate the versatile and wide-ranging potential of video games as an extramural foreign language learning platform, and by extension as a general technological learning tool, several issues and questions arise from the limitations of this study. Firstly, as experienced gamers, the informants of this study, can be considered as highly literate players of video games that possess the skills and experience to engage, with relative ease, with various games on a general level. Similarly, as indicated by the replies throughout the interview, the informants' as game hobbyists have a passionate and positive attitude and outlook about video games which is reflected by their interest and enthusiasm towards games as a cultural medium and form of popular culture. Future studies and applications, therefore, may examine and consider whether the findings of this study correspond to larger and more comprehensive demographic of learners that also include those who rarely or never play video games. Similarly, while learning to play a specific game is seamlessly integrated within the design of a gameplay experience, possible pedagogical applications should also consider the technological capabilities of different types of learners and any application of games within classrooms should take into account the varying levels of technological competence learner's possess. In the same vein, while the instances of learning described by the informants' were generally detailed and presented with credible explanation, it is necessary to address the fact that as video game

hobbyists the informants of this study, and their close and personal relationship with games, may have influenced their replies. As such, more wide-ranging research, including learners with different levels of interest are called for, in order to uncover whether the findings correspond with learners who do not necessarily have a close personal affiliation with video games.

While the findings of this study may be considered as a strong mandate and acknowledgement for the utilization of game-based language learning, teachers and educational institutions looking to apply video games or game-based learning should also consider and research the manner and scope in which using game-based learning is viable and pedagogically sound. Specifically, game-based education should be critically examined in the context of the commercial sector and in the wider framework of video games as a form of popular culture. Looking at the range and complexity of the commercial industry, it is clear that any educational games are hard-pressed in contending with commercial games outside the classroom. Similarly, lacking wide and longitudinal practical applications, it is currently unknown to what degree, the principles of game-based learning function in the long term, and whether there exists the possibility of, for instance, over-saturation that may diminish the effectiveness of game-based learning. Considering these issues, game-based language learning may best function as an additional learning tool designed for younger learners, that does not attempt to reach parity with the commercial sector but aims to apply the embedded learning principles within video games on a limited scale, while placing emphasis on drawing a connection between the informal and formal venues of language learning.

Concerning the validity of the findings, as subjective reflections given by a limited number of video game hobbyists within a restricted context, the findings of this study do not represent a comprehensive, accurate depiction about video games as a source of extramural English and should not be generalized. Rather the findings should be considered as further data and acknowledgment about the potential advantageous connection between video games and English foreign language learning. While special care was taken to increase accuracy and objectivity throughout the study, misinterpretation of the findings in qualitative research is possible and should be taken into account, by critically examining the results of this study. Despite the limitations of this study, the various findings about the association between video games and foreign language learning may be considered useful and interesting by the various emerging game-based learning approaches and the field of education in general.

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Appendices

Appendix A – Interview outline

- In your opinion, did playing video games help you learn English?
- Could you describe how video games helped you learn English?
- While playing video games, did you make use of any external language resources?
- Did your video game hobby motivate you to study English at school?
- What types or genres of video games helped the most in learning English?
- Can you tell of any specific instances in which video games were helpful?
- How would you place or value video games among other extramural mediums?
- In your opinion, do video games have any characteristics or features that make them especially good for language learning?